

Homework

10) What are the 2 conditions required for total internal reflection?

The 2 conditions are:

The Ray should travel from denser-rarer medium

The i should be greater than critical angle

20) A fish in the pond of water appears 6cm deep. What is its actual depth if n_{air} refractive index of air wrt water is $3/4$?

$$\text{Actual depth} = \text{refractive index} \times \text{apparent depth}$$

$$6 \times 4/3$$

$$\text{Actual depth} = 8\text{cm}$$

30) A rectangular of thickness of 8cm is placed on figure. The eye is kept exactly above the slab if n is 1.6. By what distance is it raised?

$$\text{Apparent depth } d_a = \text{Real depth} / \text{Refractive index}$$

$$= 8 / 1.6 = 5\text{cm}$$

$$\text{Normal shift} = \text{Real depth} - \text{apparent depth}$$

$$= 8 - 5 = 3\text{cm}$$